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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,189	04/09/2004	Graeme Huntley	M00A223	2314

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EXAMINER	
WIEHE, NATHANIEL EDWARD	

ART UNIT	PAPER NUMBER
3745	

MAIL DATE	DELIVERY MODE
01/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/822,189	HUNTLEY ET AL.	
	Examiner	Art Unit	
	Nathan Wiehe	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 26 December 2007 have been fully considered but they are not persuasive. Applicant asserts that the claim limitation, "flanges having helical structures *selectively* provided on said first and said second concentric cylinders, said flange-like cylinder, and said cylinder concentrically located relative said flange," [emphasis added] requires helical structures on all four elements. The examiner respectfully disagrees. The term selectively does not require that all the elements include the helical structure and in the context of the claim selectively only requires that enough helical structures are included on the various elements so as to form the molecular drag compression stage of the vacuum pump. Therefore, the arrangement of Stones meets the claim limitation. Further, the applicant only identifies a single embodiment of the vacuum pump (See Fig. 2) where the helical structure are located only on the concentric cylinder and the flange-like cylinder, also refer to claim 11. Since this is the only embodiment and the original disclosure describes the helical structure as being selectively provided on the element the application would not provide adequate support for the interpretation as presented in the remarks dated 26 December 2007.

Applicant further asserts that the combination of Reimer and Stones would not yield mating system including a flange-like cylinder, as claimed. The examiner respectfully disagrees. The statement of Reimer that the vacuum pump is "directly connected" to the load-lock would reasonably convey that whatever mating structure utilized by the pump is directly connected to the load-lock. Looking at Stones, there is

clearly a bolt hole arrangement in the stator body (3) constituting a mating system and thus a flange-like cylinder. When considered in combination the arrangement meets the claim limitations.

Further, Applicant attempts to import claim limitations, with regard to the flange-like cylinder, from the specification. While applicant is correct that the limitation must be interpreted in light of the specification, the words of the claim must be given their broadest reasonable interpretation and given their "plain meaning" unless such meaning is inconsistent with the specification. It is improper to import claim limitation from the specification. *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004). The argued limitations do not change the "plain meaning" of the term flange-like cylinder, but rather attempt to provide further structure to the claim and are therefore improper. If applicant wishes to so define the flange-like cylinder these limitation should be explicitly added to the claims in a proper amendment.

Additionally, the examiner would like to note that the previously cited reference of Schofield discloses a vacuum pump including helical structures on multiple rotating and stationary cylinders.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5,9-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimer et al. (7,077,159), hereinafter "Reimer" in view of Stones (6,375,413). Reimer discloses a load-lock (110) and pump (165c) wherein the pump (165c) that is directly connected to and abutting the load-lock on its bottom wall (110) (Reimer column 6, lines 48-52). Reimer's load-lock further includes loading and unloading ports. However Reimer is silent as to the construction of the vacuum pump (110). Stones discloses a dry vacuum pump (1) including a shaft (4) rotor (6) with first (16) and second (17) concentric cylinders extend outwardly from the rotor and an upper housing portion (3) having flanges (14,13) with helical structures mounted thereon and forming a Holweck molecular drag compression stage. The flanges are provided on the inner facing surface of the flange-like cylinder (14) and bother the inner and outer facing surface of the cylinder (13) (See Fig. 1). The pump also includes a regenerative compression stage formed by a plurality of concentric circular channels (c) in the body portion (3) and respective raised rings (B) on the lower surface of the rotor (6). Stones' vacuum pump provides for lower power consumption, an ability to assemble and dis-assmeble the rotor from the pump body and an overall compact design (Stone column 2, lines 47-48). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the load-lock arrangement of Reimer by utilizing a dry vacuum pump as taught by Stones for the purpose of providing a pump with lower power consumption, an ability to assemble and dis-assmeble the rotor from the pump body and an overall compact design. Following the teaching of Reimer, i.e. the direct connection of the pump to the load-lock, the upper body portion of Stones,

shown with an unnumbered bolting flange, is being construed to be the claimed mating system.

Claims 6-8,17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimer et al. (7,077,159), hereinafter "Reimer" in view of Stones (6,375,413) as applied to claims 5 and 16 above, and further in view of Toshima et al. (6,545,508), hereinafter "Toshima". The modified invention of Reimer does not disclose the use of a multiple load-lock chambers. Toshima discloses a load-lock with a first (8) and second (9) chamber that maybe pumped down separately and individually by a single pump (Toshima column 2, lines 57-59). It is noted that the use of a single pump would inherently require a valve system isolating the first and second chambers form the pump. The use of two load-lock chambers significantly increases throughput of wafers through the processing system (Toshima column 1, lines 38-44). Further, Toshima discloses the use of slit valves (21) that operate to effectively seal the various chambers of the processing system (Toshima column 3, lines 28-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Reimer by including a load-lock having two chambers and slit valves for the purpose of increasing throughput of the processing system as well as effectively sealing the respective chambers of the system.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent issued to Devine et al. discloses a dual load-lock assembly including an attachment flange for mounting a vacuum pump.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Wiehe
Examiner
Art Unit 3745

EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
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1/28/08